Chapter 1
Introduction

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Port-Orford-cedar (*Chamaecyparis lawsoniana* [A. Murr.] Parl.) is an ecologically and economically important tree species. Its natural range is geographically limited to southwestern Oregon and northwestern California, but within that area, it occupies a broad environmental range. Port-Orford-cedar can be an important component of the riparian community, providing stability and shading. It can be found on ultramafic soils as well as non-ultramafic soils. Top quality Port-Orford-cedar logs have been valued as high as $12,000 per thousand board feet. Some of the properties of the wood that make it noteworthy are its precise machining capability, decay resistance, resistance to chemical corrosion, and aromatic quality. It is particularly prized in Japan.

Port-Orford-cedar is affected by an exotic root pathogen, *Phytophthora lateralis* (Tucker and Milbrath), which was first documented in a nursery near Seattle, Washington, in 1923. The pathogen is believed to have spread south via infected nursery stock and infested soil, and was first reported in the natural range of Port-Orford-cedar in 1952 near Coos Bay, Oregon. By 1960, infected trees were found on the Siskiyou National Forest, and surveys in 1964, 1974, 1983 and 1986 showed increasing levels of infestation and tree mortality. Infected trees were first identified in California in 1980. The pathogen now infects Port-Orford-cedar on about nine percent of the acreage of federally-administered lands within the range of the species. Most of this acreage is on sites of high risk to spread the pathogen, i.e., along streams and roads.

In the late 1980s and early 1990s, public awareness of Port-Orford-cedar and the root disease affecting it reached a high level. In response to public interest and the agencies' own concerns, the U.S. Department of Agriculture Forest Service and U.S. Department of the Interior Bureau of Land Management (BLM) greatly increased their efforts to conserve Port-Orford-cedar and reduce the occurrence of *P. lateralis*.

Figure 1.1—Infected Port-Orford-cedar

In 1985, Zobel and others (Roth and Hawk) produced a monograph, *Ecology, Pathology, and Management of Port-Orford-cedar*, which reviewed the then current information on distribution, physiology, genetics, autecology, and pathology of Port-Orford-cedar. They also proposed management options to limit the impacts of *P. lateralis*.

This range-wide assessment is intended to supplement the information Zobel et al. (1985) presented. It focuses on the status of Port-Orford-cedar on federal lands throughout the range of the species. Chapter 2, Ecological Factors Associated with Port-Orford-cedar, describes the distribution

of Port-Orford-cedar, as well as the geographic units and the broad climatic regimes in which it occurs. It also describes the high diversity of plant associations that make up the Port-Orford-cedar plant series, and lists some of the endemic, rare or unique plants that grow in association with it. Chapter 3 outlines the biology of the pathogen, *P. lateralis*. The impact of *P. lateralis* on Port-Orford-cedar is summarized in Chapter 4. It shows disease locations over time and rates of spread at local and landscape scales. Chapter 5 describes the genetic variability of Port-Orford-cedar across its range and the tests for genetic differentiation. Developing resistant genotypes of Port-Orford-cedar is an important strategy in conserving the species in its natural range. Chapter 6 describes the resistance-screening program that allows selection of resistant genotypes and how they may be propagated.

Chapter 7 discusses the economics of the species and compares domestic and imported volumes and values. Chapter 8 presents the value of Port-Orford-cedar particularly to Native American and Asian peoples. It includes two examples of local community or public involvement in Port-Orford-cedar management. Chapter 9 shows the components of risk analysis and discusses how such analyses may be used in management decisions. Management techniques and challenges are described in Chapter 10.

The objectives of this document are to assemble the known scientific information on Port-Orford-cedar and *P. lateralis* for federal lands since Zobel et al. (1985) and review current societal values and associated considerations for management of Port-Orford-cedar.

This assessment is not a decision document. It contains information that could be used to guide future supplements or revisions of Forest Service or BLM management plans. If new plans are developed or current plans revised, public comment will occur during the process as required by the National Environmental Policy Act. Appendix A shows the relationship of this document to other legal documents and authorities.

Literature Cited

Zobel, D.B.; Roth, L.F.; Hawk, G.M. 1985. Ecology, pathology, and management of Port-Orford-cedar (*Chamaecyparis lawsoniana*). General Technical Report PNW-184. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. 161 p.

Figure 1.2—Dense understory of Port-Orford-Cedar near Coos Bay, Oregon